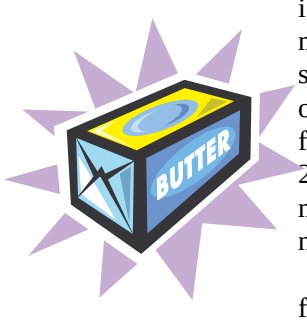
Fats Ratio Crucial to Lowering Cholesterol

If you go on a low-fat diet, you will surely lower your cholesterol count, right?

Not necessarily, reports chemist Gary J. Nelson with the ARS Western Human Nutrition Research Center.

Among 11 healthy men aged 20 to 35 who volunteered for a study led by Nelson, cholesterol levels didn't change significantly—regardless of whether the men were on a low-fat or high-fat stint. Fat calories made up 39 percent of the day's total calories in the high-fat menus, while accounting for only 22 percent during the low-fat regimen—meaning that fat calories were nearly cut in half for those days.



Why didn't such a drastic drop in fat intake lead to a similar decrease in cholesterol?

"Perhaps because we didn't change the ratio of fats; that is, saturated to polyunsaturated to monounsaturated," says Nelson. "We stayed with 28 percent saturated fat—the kind in butter or lard; 33 percent monounsaturated; 6 percent monounsaturated transfats, as are found in some margarine; and 29 percent polyunsaturated fats—the kind in healthful cooking oils. Other minor fatty acids made up the remaining 4 percent.

"These findings," Nelson says, "should be of interest both to people who are trying to lower their cholesterol and to health care providers advising patients on how to change their diets to improve their cardiovascular health."

For the experiment, all volunteers ate the high-fat diet for 20 days. Then, six volunteers ate low-fat meals for 50 days, while the other five volunteers ate the high-fat foods—whole milk instead of nonfat and cream cheese, not jelly, on their breakfast bagels, for example. After that, the two groups crossed over to the opposite menus for the final 50 days of the study.

Nelson collaborated in the study with ARS chemists Perla C. Schmidt and Darshan S. Kelley at the Nutrition Center.—By **Marcia Wood,** ARS.

Gary J. Nelson is at the USDA-ARS Western Human Nutrition Research Center, University of California, One Shields Ave., Davis, CA 95616; phone (530) 752-5356, fax (530) 752-8966, e-mail gnelson@whnrc.usda.gov. ◆

Women's Depression Not Linked to Low Iron

Women experience more depression during their childbearing years. And twice as many women as men are clinically depressed, according to standardized tests. This gender difference begins in adolescence and is more pronounced among married women aged 25 to 45 with children.

Researchers at ARS' Grand Forks Human Nutrition Research Center in North Dakota wanted to know if this phenomenon is related to marginal iron levels.

About 1 in 5 women of childbearing age has low iron stores, compared to 1 in 60 men, says Janet R. Hunt, a nutritionist and dietitian. So she and psychologist James G. Penland tested the iron status and psychological state of 384 women aged 20 to 45 years.

"Other studies on the question have tended to go both ways," Hunt says. "But there has never been a strong case for a relationship. Our study indicates no relationship between marginal iron status and depression."

The survey volunteers filled out a standard psychological profile and mood checklist and also gave a blood sample. Hunt says the study used the most sensitive tests of iron stores and standardized psychological profiles, unlike some earlier tests.

The researchers found no relationships between mood scores and three signs of iron status in the blood—serum ferritin, serum iron, and hemoglobin. But the study did yield some surprises, says Hunt.

Women with low ferritin levels were less likely to describe themselves as depressed or tired than women with normal ferritin. The researchers believe the finding may be unique to this group of women and not representative of the population in general.

A severe iron deficiency, however, could cause fatigue and depression, Hunt says. Anemia would show up in a simple hemoglobin or hematocrit test. "So women experiencing these symptoms would not need to have their ferritin levels tested as has been suggested in the lay press," says Hunt.

More surprises: Iron stores were not associated with meat consumption or the use of iron supplements. But iron stores were higher in women who used oral contraceptives and lower in women who regularly donate blood.—By **Judy McBride,** ARS.

Janet R. Hunt is at the USDA-ARS Grand Forks Human Nutrition Research Center, P.O. Box 9034, University Station, Grand Forks, ND 58202-9034; phone (701) 795-8328, fax (701) 795-8395, e-mail jhunt@gfhnrc.ars.usda.gov. ◆